

LVI.—On *Philomedusa Vogtii*, a parasite on *Medusæ*.

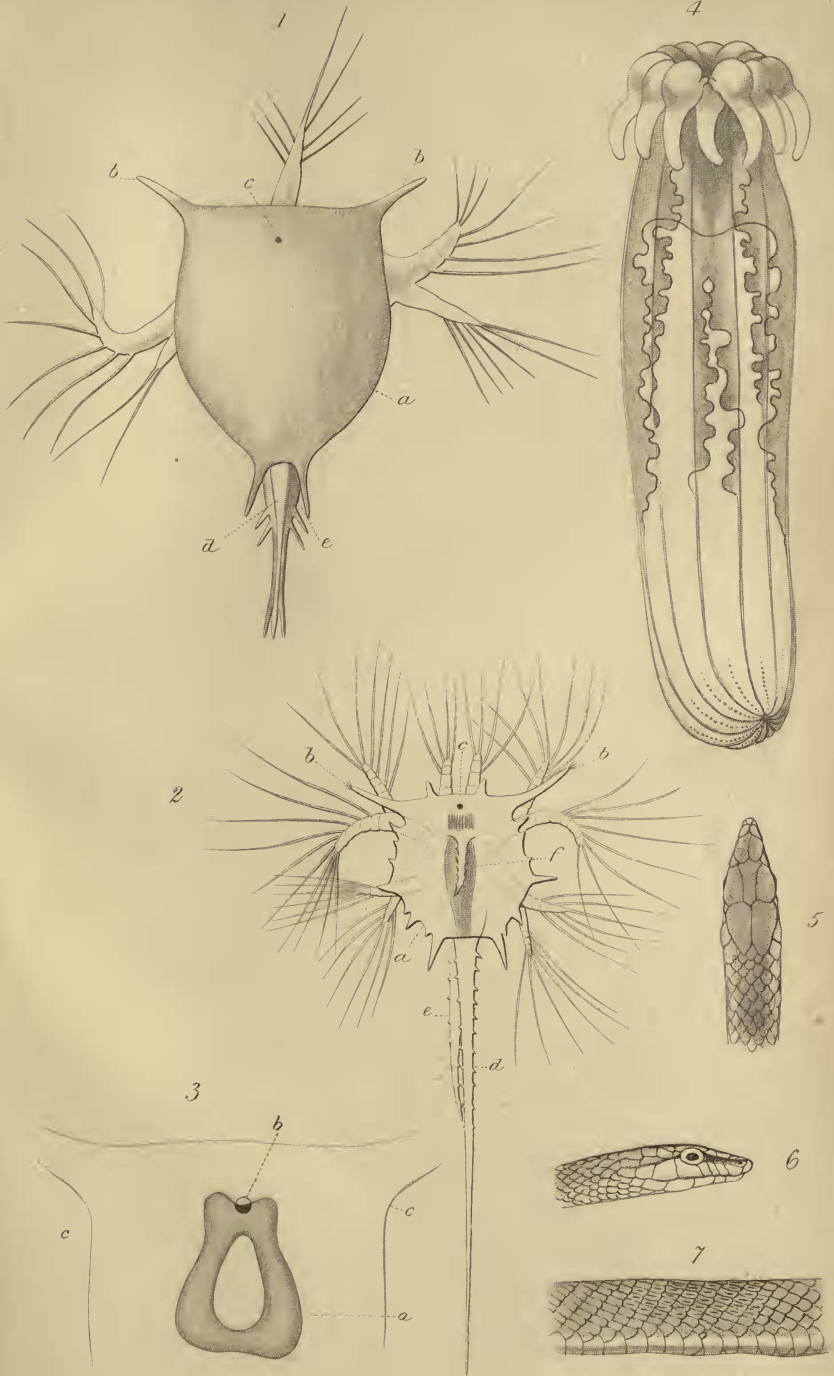
By FRITZ MÜLLER, of Santa Catharina*.

[With a Plate.]

THE *Medusæ* are infested by the most various parasites. Infusoria swim about in the testes of *Tamoya*; Trematoda and other Entozoa often occur in abundance in the gelatinous substance of different species; Isopoda, Amphipoda, and a *Palemon* of glassy transparency, move about in the mucus of the disk and arms, the urticating filaments of which cause rapid death to other Crustaceans; and a Crab (*Libinia*?), of gigantic size compared with its host, is in the habit of taking up its abode between the four columns bearing the arm-plates of the Rhizostomidæ. But it appeared to me that the most remarkable of all these parasites, and one well worthy of a particular description, is the Helianthoid Polype to which the following pages are devoted, partly as it is the first parasitic species of its group, and partly because its almost Acalephoid transparency enables us to make an easy and certain inspection of its certainly very simple anatomical conditions.

Philomedusa Vogtii, which is the name I give to the animal, appears, when it has dilated the cavity of the body with water, in the form of a cylindrical sac, of about 30 millim. (rarely over 50 millim.) in length, and 5 millim. in thickness. The posterior extremity is usually slightly diminished, rounded-off in a spherical form, or more or less drawn in like a funnel. At the anterior extremity there is a circle of twelve short (about 4 millim. in length), thick, cylindrical tentacles with rounded, closed apices, which are sometimes carried expanded in the same plane, sometimes extended obliquely forwards, but most frequently bent back towards the posterior extremity. All the tentacles are nearly of the same length; nevertheless we may distinguish six longer ones, and six shorter ones alternating with these, although this inequality is frequently effaced by their different states of contraction. Commencing between each pair of tentacles, twelve shallow longitudinal furrows traverse the surface of the body, and meet together in a radiate form in the middle of the posterior extremity. The colour of the animal in this state is limited to a whitish turbidity; when the animal is most strongly contracted, which usually gives it the form of a fig with twelve longitudinal furrows and numerous transverse wrinkles, the colour is concentrated to a dingy yellow, with more or less of a reddish tinge. The tentacles sometimes appear of a slightly reddish colour; and at the base, on the inside, there is usually

* Translated from Wiegmann's Archiv, 1860, p. 57, by W. S. Dallas, F.L.S.





an opaque pale-yellow ring; less constantly there are similar spots on the outside at the base, and brownish spots between these.

The entire surface of the body bears a short-ciliary coat; and elongated-narrow thread-capsules, of 0·012 to 0·016 millim. in length, occur everywhere, but are especially numerous on the tentacles.

The form of the mouth is very variable. When the tentacles are bent obliquely backwards, it usually appears as a wide open funnel, surrounded by eleven pads separated by sharp furrows, preceding the same number of tentacles. One of the shorter tentacles thus remains without a representative pad; whilst the two neighbouring corresponding pads are distinguished by their breadth, as indeed the longer tentacles in general are represented by broader and the shorter ones by narrower pads. The mouth rarely appears nearly round, but is usually elongated in the direction of the diameter passing through the tentacle which is destitute of a basal pad. Corresponding to this tentacle, there remains between the two adjacent pads a tolerably deep channel, at the outer extremity of which each of these pads is drawn out into a small tongue-like process. A third similar process lies between these two, opposite to the padless tentacle. These three processes, which are usually white and opaque, strike the eye particularly when, the tentacles being directed obliquely forwards, the mouth is nearly closed: the pads, which are nothing but peculiar inflations of the cavity of the body, are then a good deal flattened, and the tongue-like processes, being extended straight out, rise above their level.

The buccal pads, the furrows separating them, and the channel commencing at the tongue-like processes are continued into the short stomach, which attains about twice the length of the tentacles, and is the immediate continuation of the funnel of the mouth. The margins of the channel appear to be capable of laying themselves together to form a complete tube in the whole length of the stomach. At the bottom the stomach is in communication, by a wide orifice, with the body-cavity, into which one may not unfrequently look down from the mouth. When it closes by bringing its walls together, it appears flat—narrow when seen in the direction of the diameter passing through the channel, broad when seen in a direction perpendicular to this. In the latter lateral view it is seen to project into the cavity of the body further on the side of the channel than on the opposite side.

The wide body-cavity is clothed throughout with cilia. Around the stomach it is divided by muscular walls into twelve chambers, which correspond with the tentacles, and are continued into their cavities. The partitions do not reach quite to the

anterior extremity, but there remains here a round aperture in each, serving as a communication between every two adjacent chambers. In this way a sort of annular canal is produced round the mouth at the base of the tentacles. The partitions are seldom seen perforated with holes in other places. Posteriorly the partitions are continued, following the longitudinal furrows, to the extremity of the body; but beyond the stomach they form very inconsiderable projections into the general cavity. They seem to be formed of two lamellæ,—at least, when looked at straight from the outside, they appear like two dark stripes, separated by a narrow, pale, intermediate one.

From their insertion upon the stomach to the beginning of the hindmost third or fourth of the length, the partitions are bounded by a broad, yellowish, moderately opaque border, folded in an undulated or frilled manner, of which the margin floating freely in the body-cavity is thickened into pads or cushions. On this margin, about 0.1 millim. in breadth, and which is sharply separated from the frilled portion by a paler line, the ciliary movement is particularly lively; and an abundance of thread-capsules, of twice the length and thickness of those occurring in the external integument, are imbedded in it. These twelve frills differ in their anterior and posterior extension, and thus show still more distinctly the bilateral symmetry already indicated in the formation of the mouth, in relation to a plane drawn through the axis of the body and the oral channel. When considered in their posterior extension, the first, third, and fifth pairs (counting from the side of the oral channel) constantly appear to be the longest, the sixth pair is of intermediate length, and the second and fourth are the shortest. The two latter pairs, on the contrary, reach furthest anteriorly, the partitions belonging to them descending only to about the middle of the stomach; the third, fifth, and sixth pairs are inserted at the bottom of the stomach, whilst the two partitions of the first pair form a chamber closed towards the interior above the stomach. I believe that we may regard the thickened margins of the frills as analogous to the mesenteric filaments of the *Actinæ*, which here only exhibit the peculiarity of being attached throughout their whole length. The frills themselves may prove to be the place of formation of the sexual materials, of which I have been unable to find any indubitable traces in numerous animals examined in the course of nearly a year.

In the larger *Actinæ* the existence of small apertures in the cavity of the body is usually betrayed only by the squirting-out of fine streams of water when the animals are seized; in our animals these orifices themselves are easily detected. They appear, even to the naked eye, as *twelve radiating rows of pale dots*